

ABSTRACT:**METHODS AND APPARATUS FOR CONSTRUCTING VIRTUAL
ENVIRONMENTS**

The invention relates to methods, apparatus, and software for designing and building virtual environments for playing computer games. A map builder is used to construct one or more two-dimensional maps comprised of tiles selected from a set of tiles, the map or maps representing the virtual environment for the computer game. Data describing the map is then combined with tile data providing 3D geometry to create the virtual environment. The tile data preferably also includes non-visible game-related data such as collision and navigation data, which is also combined to provide game data for the game's virtual environment. The tiles include interfaces for connecting one tile to another and, in a preferred embodiment, two versions of the interface geometry are provided for each tile, one with the interface open, the other with the interface closed.

The invention facilitates the rapid construction of 3D virtual environments for playing games.

Figure 18a